EXHIBIT A

Designation Run Report

IB-618

Ingram, Buster 10-05-2020

Our Designations 01:06:19

Total Time 01:06:19

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6:18 - 7:01	**Ingram, Buster 10-05-2020 (00:00:37)** 6:18 California 94111. The date today is Monday, October 6:19 5th, 2020, and the time is approximately 8:02 a.m. 6:20 Pacific Standard Time. And if I'm correct, our witness 6:21 is three hours ahead of us; so that would be 11:30 a.m. 6:22 Eastern Standard Time. 6:23 This deposition is taking place remotely via 6:24 Zoom in the matter of the Pacific Fertility Center 6:25 litigation with case number 3:18-CV-01586-JSC. This is 7:1 the videotaped deposition of Buster Ingram.	IB-618.0
9:06 - 9:16	**Ingram, Buster 10-05-2020 (00:00:31)** 9:6 Q. Mr. Ingram, is your first name Buster? 9:7 A. No, ma'am. 9:8 Q. Is that a nickname? 9:9 A. Yes. 9:10 Q. What is your given name? 9:11 A. Beldon Ingram, Jr. 9:12 Q. Within -- are you currently employed by Chart? 9:13 A. Yes, ma'am. 9:14 Q. And within Chart does everyone know you as 9:15 Buster? 9:16 A. Yes, ma'am.	IB-618.0
10:10 - 10:22	**Ingram, Buster 10-05-2020 (00:00:49)** 10:10 Q. Got it. Mr. Ingram, what is your educational 10:11 background? 10:12 A. Graduated high school and then attended Pickens 10:13 State Vocational School to take welding. 10:14 Q. Got it. Do you have some sort of certification 10:15 in welding? 10:16 A. Yes, ma'am. 10:17 Q. What is that certification? 10:18 A. Well, I have ASME, DOT certs. 10:19 Q. Are those two separate certifications? 10:20 A. Yes, ma'am. 10:21 Q. Okay. What is an ASME certification? 10:22 A. Pressure vessel code.	IB-618.0
11:02 - 11:17	**Ingram, Buster 10-05-2020 (00:01:12)** 11:2 Q. BY MS. ZEMAN: ASME is the code for vessels? 11:3 A. Pressure vessels. Yes, ma'am. 11:4 Q. Got it. Okay. And what is the DOT	IB-618.0

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	11:5 certification?	
	11:6 A. Same thing. It's also a pressure vessel code.	
	11:7 Q. Okay. When did you get your ASME	
	11:8 certification?	
	11:9 A. I probably couldn't remember when. I've been	
	11:10 here 35 years. So....	
	11:11 Q. You've been with Chart for 35 years?	
	11:12 A. Yes.	
	11:13 Q. Okay. And did you have your ASME certification	
	11:14 when you started with Chart?	
	11:15 A. No, ma'am.	
	11:16 Q. Did you receive it after you started at Chart?	
	11:17 A. Yes.	
11:25 - 17:18	**Ingram, Buster 10-05-2020 (00:12:15)**	IB-618.0
	11:25 Q. Have you had that certification longer than ten	
	12:1 years?	
	12:2 A. Yes.	
	12:3 Q. Have you had it longer than 20 years?	
	12:4 A. Yes.	
	12:5 Q. Have you had it longer than 30 years?	
	12:6 A. Don't recall. It would be close.	
	12:7 Q. Okay. And what did you do to receive the ASME	
	12:8 certification?	
	12:9 A. Take a physical welding test. They x-ray them,	
	12:10 do a bend test. That determines whether you pass or	
	12:11 fail.	
	12:12 Q. And who did you take the test with? Was it	
	12:13 with Chart or with some -- with an ASME entity?	
	12:14 A. With Chart.	
	12:15 Q. What is a bend test?	
	12:16 A. They take your test plate, they saw it, put it	
	12:17 in a hydraulic machine and bend it to see if it	
	12:18 withstands the stress.	
	12:19 Q. Do you hold a vocational license in welding?	
	12:20 A. Yes.	
	12:21 Q. When did you receive that?	
	12:22 A. In 1985.	
	12:23 Q. Did you have to do a -- any sort of physical	
	12:24 weld test to obtain that vocational license?	
	12:25 A. Not a physical test. We had so many hours we	

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13:1 had to complete at school is what cleared us for the
13:2 test.
13:3 Q. And when did you receive the DOT certification?
13:4 A. It would have been along the same line with the
13:5 ASME.
13:6 Q. And why did you obtain the ASME certification?
13:7 A. You have to be certified to weld on pressure
13:8 vessels.
13:9 Q. What's a pressure vessel?
13:10 A. It is a cryogenic vessel inner and outer that's
13:11 held with liquid and holds pressure.
13:12 Q. What's an inner and an outer?
13:13 A. You have an inner cylinder that's insulated
13:14 that inside an outer jacket that's sealed with vacuum on
13:15 it. But basically like a big thermos bottle.
13:16 Q. And is that a pressure vessel?
13:17 A. Yes, ma'am.
13:18 Q. Are all of the cryogenic freezers that Chart
13:19 manufactures pressure vessels?
13:20 A. No, ma'am.
13:21 Q. Which ones aren't?
13:22 A. Biological freezer. They're not.
13:23 Q. Do biological freezers have an inner and an
13:24 outer?
13:25 A. Yes.
14:1 Q. And are they insulated?
14:2 A. Yes.
14:3 Q. And are they sealed with a vacuum?
14:4 A. They have vacuum.
14:5 Q. Are they basically a big thermos bottle?
14:6 A. No, ma'am.
14:7 Q. In what way are they not?
14:8 A. They have an open top.
14:9 Q. What's that mean?
14:10 A. That means that you can put liquid in, but
14:11 there's no way for it to build pressure. It's open. It
14:12 can vent at any stage.
14:13 Q. What's an example of a cryogenic freezer
14:14 manufactured by Chart that is a pressure vessel?
14:15 A. I don't know of a freezer that's manufactured

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14:16 as a pressure vessel.
14:17 Q. So earlier when I asked you what a pressure
14:18 vessel is your answer was that it's a cryogenic vessel
14:19 inner and outer that's -- holds liquid and holds
14:20 pressure. And then you described a cylinder, an inner
14:21 cylinder insulated with an outer jacket, etcetera. Were
14:22 you not describing what a pressure vessel is?
14:23 MR. DUFFY: Objection. Form of the question.
14:24 Confusing. Maybe restate that, Amy. I'm sorry.
14:25 Q. BY MS. ZEMAN: Mr. Ingram, are you able to
15:1 answer that question?
15:2 A. Yes.
15:3 Q. Could you do so, please.
15:4 A. It's like I told you. It's you have an inner
15:5 and an outer, both heads welded on with attachments.
15:6 And the tank is completely sealed. For a freezer, a
15:7 biological freezer, is not. It has an open neck at all
15:8 times.
15:9 Q. Does Chart manufacture any pressure vessels?
15:10 A. Yes.
15:11 Q. Okay. What's an example of a product that
15:12 Chart manufactures that is a pressure vessel?
15:13 A. CO2 tanks.
15:14 Q. Anything else?
15:15 A. You have LNG tanks.
15:16 Q. Anything else?
15:17 A. You have Trifectas.
15:18 Q. Are those examples you just provided, are those
15:19 cryogenic vessels?
15:20 A. Yes.
15:21 Q. What makes them cryogenic vessels?
15:22 A. Contents of the liquid that goes inside the
15:23 tank.
15:24 Q. Just to make sure I understand, so you're
15:25 saying a CO2 tank is a cryogenic vessel?
16:1 A. Yes, ma'am.
16:2 Q. Based on the contents?
16:3 A. The temperature and the liquid.
16:4 Q. And what is it that makes a CO2 tank a
16:5 cryogenic vessel?

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16:6 A. I just told you. The contents, the
16:7 temperature, and the liquid that goes inside the tank.
16:8 Q. Okay. What are the contents of a CO2 tank?
16:9 A. CO2.
16:10 Q. And what's the temperature within a CO2 tank?
16:11 A. I can't give you the exact temperature for CO2.
16:12 But it's cold.
16:13 Q. And what's the liquid inside a CO2 tank?
16:14 A. The liquid is CO2.
16:15 Q. What is the liquid?
16:16 A. Liquid carbon dioxide.
16:17 Q. Thank you. Mr. Ingram, what is your current
16:18 position at Chart?
16:19 A. Maintenance and continuous improvement.
16:20 Q. Was that continuous improvement?
16:21 A. Yes.
16:22 Q. What's your current title?
16:23 A. Maintenance, continuous improvement. No title.
16:24 Q. Is there -- how long have you been doing
16:25 maintenance and continuous improvement?
17:1 A. Two years.
17:2 Q. What was your position with Chart before then?
17:3 A. Welder.
17:4 Q. And how long were you a welder?
17:5 A. Thirty-four years.
17:6 Q. Have your only positions at Chart been as a
17:7 welder and as a maintenance and continuing improvement
17:8 -- continuous improvement? Sorry.
17:9 A. No. First year I worked in fabrication.
17:10 Q. What did you do in fabrication?
17:11 A. Fabricated small parts that goes on the tanks.
17:12 Q. But you were not welding products at that
17:13 point?
17:14 A. No, ma'am.
17:15 Q. Did you hold any positions with Chart other
17:16 than in fabrication, as a welder, and as a maintenance
17:17 and continuous improvement?
17:18 A. No, ma'am.

17:23 - 18:08	**Ingram, Buster 10-05-2020 (00:00:52)**	**IB-618.0**

17:23 Q. What are your current responsibilities at

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	17:24 Chart?	
	17:25 A. Make sure the main line, all equipment stays up	
	18:1 and running and safety.	
	18:2 Q. What product lines do you work with?	
	18:3 A. As far as product lines, I don't work with a	
	18:4 product line. I just maintain the equipment, make sure	
	18:5 it stays functional, operational.	
	18:6 Q. What products are manufactured on the line that	
	18:7 you keep running?	
	18:8 A. Bio freezers.	
18:13 - 18:25	**Ingram, Buster 10-05-2020 (00:00:50)**	IB-618.0
	18:13 Q. What products did you work on when you were a	
	18:14 welder at Chart?	
	18:15 A. Pressure vessel.	
	18:16 Q. Anything else?	
	18:17 A. I worked on a few bio freezers.	
	18:18 Q. Anything else?	
	18:19 A. Vacuum-jacketed pipe.	
	18:20 Q. Anything else?	
	18:21 A. No.	
	18:22 Q. So as a welder at Chart you've worked on	
	18:23 pressure vessels, a few bio freezers, and	
	18:24 vacuum-jacketed pipe; is that correct?	
	18:25 A. Yes.	
19:07 - 19:15	**Ingram, Buster 10-05-2020 (00:00:32)**	IB-618.0
	19:7 Q. And what type of welding work did you do on the	
	19:8 1800 series freezers?	
	19:9 A. TIG welding.	
	19:10 Q. On all joints within that tank model?	
	19:11 A. They're all TIG welded.	
	19:12 Q. Did you work on all of the different joints?	
	19:13 A. No.	
	19:14 Q. Which joints did you work on?	
	19:15 A. The neck and inner and outer heads.	
21:11 - 21:15	**Ingram, Buster 10-05-2020 (00:00:25)**	IB-618.0
	21:11 Q. Are you familiar with the MVE 800 series?	
	21:12 A. Yes.	
	21:13 Q. What can you tell me about the MVE 800 series?	
	21:14 A. It's a smaller version of the 15- and the 1800	
	21:15 built on the same complicity, just smaller.	

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21:21 - 21:25	**Ingram, Buster 10-05-2020 (00:00:18)** 21:21 Q. What is an open top tank? 21:22 A. What is an open top tank? 21:23 Q. Correct. 21:24 A. Basically the easiest way for me to explain it, 21:25 it looks like a bucket.	IB-618.1
23:01 - 25:07	**Ingram, Buster 10-05-2020 (00:05:21)** 23:1 Q. Do Chart's welding procedures ever address what 23:2 type of weld to apply? 23:3 A. Yes. 23:4 Q. How are Chart's welding procedures organized? 23:5 A. Meaning? 23:6 Q. Is there a welding procedure for each series of 23:7 cryogenic freezer? 23:8 A. Yes. There's a welding procedure for each 23:9 joint. 23:10 Q. If you were to manufacture an 1800 tank, what 23:11 procedures would apply for welding on that tank? 23:12 A. Well, the whole tank has always been gas 23:13 tungsten arc weld. TIG. 23:14 Q. I'm asking a slightly different question. So 23:15 let me try to rephrase. So what written procedures 23:16 would apply for the manufacture of an 1800 tank? 23:17 A. What written procedures? 23:18 Q. Correct. 23:19 A. It depends on the engineering, what they want 23:20 to put on the drawing, whether it's MIG or whether it's 23:21 TIG. 23:22 Q. All right. The 1800 tank model currently 23:23 exists; right? 23:24 A. The 1800, yes. 23:25 Q. So if you were asked right now to manufacture 24:1 one of those, what welding procedures would you go 24:2 gather to determine what needed to be done? 24:3 A. Each joint, each procedure has its own 24:4 parameters. So you look at the drawing, then you pull 24:5 the procedure. It will define the range within which 24:6 you have to stay in. 24:7 Q. And would that procedure also tell you what 24:8 type of weld to apply?	IB-618.0

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	24:9 A. Yes. 24:10 Q. How would you know what drawing to pull? 24:11 A. By the travel card when the order's released to 24:12 build the tank. 24:13 Q. Does that essentially mean that the work order 24:14 for a specific tank will indicate what drawing applies? 24:15 A. Yes. 24:16 Q. And so if you were on the line as a welder and 24:17 you received a work order for a tank, would your normal 24:18 practice be to pull the drawing? 24:19 A. Yes. You go to a computer, look at the 24:20 drawing, go forward. 24:21 Q. And so in that scenario once you pulled the 24:22 drawing up on the computer what would be your next step? 24:23 A. Depends on the process and what you're working 24:24 on. If you're building a head, you look at what parts 24:25 go inside the head. 25:1 Q. And you would pull the welding procedures based 25:2 off of the drawing? 25:3 A. Yes. 25:4 Q. Is there anything else -- is there any other 25:5 documentation you would need to look at in order to 25:6 complete the welds? 25:7 A. No.	
28:11 - 31:06	**Ingram, Buster 10-05-2020 (00:07:51)** 28:11 Q. What is this document? 28:12 A. A tank drawing for an MVE 808. 28:13 Q. Is this the sort of drawing that a welder would 28:14 pull up when manufacturing a tank? 28:15 A. This particular one, no. 28:16 Q. Why not this particular one? 28:17 A. Because it's showing you a completed tank. 28:18 Q. How is that different from the drawings that a 28:19 welder would pull up while manufacturing a tank? 28:20 A. You always start with your inner. You got an 28:21 inner drawing, an outer drawing, and a final drawing. 28:22 Q. Is the document in front of you a final 28:23 drawing? 28:24 A. It says spec drawing, but it's closer to a 28:25 final drawing than it is a manufacture drawing.	IB-618.0

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29:1 Q. Did you say that this document is a spec
29:2 drawing?
29:3 A. That's what it says.
29:4 Q. And is a spec drawing different than a
29:5 manufacturing drawing?
29:6 A. Well, all this is doing right here, what I'm
29:7 looking at, is giving me the dimensions of the overall
29:8 completed tank. Spec. There's nothing showing me
29:9 anything about the tank itself internally or externally.
29:10 Q. What type of drawing would a welder have access
29:11 to during the manufacturing process?
29:12 A. He would have all of his subassembly drawing.
29:13 Q. Is there a general name for those drawings
29:14 other than subassembly drawing?
29:15 A. Like I said earlier, they'll get the -- release
29:16 the work order, the operator will go over to the
29:17 computer, enter whatever design, whatever model
29:18 particular tank they're building, they'll pull their
29:19 drawing and start with the inner and go from there.
29:20 Q. Would a welder have any access to spec
29:21 drawings?
29:22 A. Yes. It will be in the drawing package.
29:23 Q. Does each tank have a drawing package?
29:24 A. Yes, ma'am.
29:25 Q. What type of drawings are included in the
30:1 drawing package?
30:2 A. Well, from beginning to end.
30:3 Q. And when you say each tank, are you referring
30:4 to each individual tank model or each tank series?
30:5 A. Each model has its own drawing.
30:6 Q. And each model has its own drawing package?
30:7 A. Yes, ma'am.
30:8 Q. So the MVE 808 should have a drawing package;
30:9 is that correct?
30:10 A. Yes.
30:11 Q. As a welder would the document in front of you
30:12 be utilized during the manufacture of a tank?
30:13 A. Yeah. I mean, the dimensions of where the top
30:14 of your neck is down to your seams. But them will be on
30:15 the assembly drawings just as well as they are on the

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	30:16 spec drawings. 30:17 Q. Are assembly drawings the type of documents 30:18 that a welder would refer to during manufacture of a 30:19 tank? 30:20 A. Yes. 30:21 Q. Okay. And how are assembly drawings different 30:22 from spec drawings? Do they have more detail? 30:23 A. Yes. 30:24 Q. Are they broken down into more subassemblies? 30:25 A. Depending on the component, the part of the 31:1 tank you're working on, yes. 31:2 Q. Are drawings sometimes shared across tank 31:3 models? 31:4 A. No. Each tank has its own drawing. 31:5 Q. All right. You can close that document out. 31:6 Thank you. And I will add another one. I've just added	
31:12 - 36:08	**Ingram, Buster 10-05-2020 (00:11:46)** 31:12 Q. What is this document? 31:13 A. This is a actual assembly drawing. 31:14 Q. What tank does it apply to? What was that 31:15 again? 31:16 A. Inner/outer assembly of an 808. 31:17 Q. Does this document tell you what weld 31:18 procedures to refer to? 31:19 A. Let me.... It just shows you welds. I don't 31:20 see anything specifying in front of me what type. 31:21 Q. Does that surprise you? 31:22 A. No. 31:23 Q. Why not? 31:24 A. Because this tank has been TIG welded forever. 31:25 It's impossible to MIG weld it. So everybody that's 32:1 worked here and worked on it has -- knows it's TIG 32:2 welded. 32:3 Q. So this document does not tell you that it 32:4 needs to be TIG welded, but it's common knowledge at 32:5 Chart that it would be? 32:6 A. Yes. 32:7 Q. How would someone using this document know what 32:8 amperage to use? 32:9 A. Well, looking at this document, it just tells	IB-618.0

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32:10 you typical fill welds, fill weld. There's nothing here
32:11 -- it's not a very -- your inner is very thin. So it's
32:12 -- it's impossible to MIG weld it. It's impossible to
32:13 use higher amperages.
32:14 Q. Does this document refer to a WPS?
32:15 A. I am looking to see if there's any WPS
32:16 indicators on it. I don't see any WPS information. The
32:17 only thing I see, it flat out tells you that it's TIG
32:18 welded. You see your GTAW. That's it.
32:19 Q. Whereabout on the page do you see that?
32:20 A. Double number 11. Four places.
32:21 Q. So I see 11 in a circle at the roughly the top
32:22 left corner.
32:23 A. Yes.
32:24 Q. Is that one of the bubbles you're referring to?
32:25 A. Yes.
33:1 Q. And where does that indicate that it's a TIG
33:2 weld?
33:3 A. Well, the little line up above it, it said GTAW
33:4 four places.
33:5 Q. And so that symbol where the GTAW is with the
33:6 line attaching onto the drawing, is that a symbol that
33:7 indicates a weld to be applied in that location?
33:8 A. Yes.
33:9 Q. And does it indicate what type of weld should
33:10 be applied in that location?
33:11 A. Yes.
33:12 Q. What type of weld is it?
33:13 A. A fillet weld.
33:14 Q. And what's a fillet weld?
33:15 A. A fillet weld is -- you've got -- you're
33:16 marrying two surfaces together of almost on a -- as a T
33:17 joint plane. It's a fillet. So you have to actually
33:18 fillet.
33:19 Q. And what part of that little symbol there
33:20 indicates that it's a fillet weld?
33:21 A. The little triangular symbol you see on the
33:22 bottom of the line.
33:23 Q. About halfway along the line there?
33:24 A. Yes.

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33:25 Q. Okay. And over more at the top right of the
34:1 drawing there's what appears to be a cutaway image of a
34:2 tank on its side. Do you see that?
34:3 A. I do.
34:4 Q. And at the top right corner of that particular
34:5 tank image there is a line with a caret at the end and
34:6 it says T-Y-P in it, and it sort of attaches and points
34:7 up to something that has a 30 in a circle indicated.
34:8 A. Yes.
34:9 Q. Do you follow that?
34:10 A. I do.
34:11 Q. Does that symbol indicate that a weld should be
34:12 placed in the location indicated?
34:13 A. Just a typical fill weld. Just the seal.
34:14 That's all it's saying.
34:15 Q. What does T-Y-P mean?
34:16 A. Typical.
34:17 Q. And is typical a type of weld?
34:18 A. It's your typical weld around that particular
34:19 joint.
34:20 Q. How would a new welder know what the typical
34:21 weld is to put on that joint?
34:22 A. Actually, a new welder would not be working on
34:23 that joint.
34:24 Q. Why is that?
34:25 A. Because that's so thin.
35:1 Q. Does that mean it needs to be a more
35:2 experienced welder working on it?
35:3 A. Yes.
35:4 Q. How would an experienced welder new to Chart
35:5 know what type of weld is typical to be a place -- to be
35:6 placed there?
35:7 A. Because, like I said, it's a typical TIG weld
35:8 saying a seal weld. Anybody that's been doing it for
35:9 years and knows what they're doing, they'll look at the
35:10 drawing and know.
35:11 Q. When you say "anybody that's been doing it,"
35:12 what do you mean by "it"?
35:13 A. Welding.
35:14 Q. Welding generally?

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35:15 A. Yes. If you -- if you asked -- you said if
35:16 someone has experience -- or a new experienced person,
35:17 they would come in and know exactly what to do on that
35:18 particular joint.
35:19 Q. So based on this drawing, you think any welder,
35:20 regardless of their knowledge of Chart's practices,
35:21 would know what type of weld to apply here?
35:22 A. Yes. Because you don't just turn somebody
35:23 loose on one of these tanks that's never done it. They
35:24 have somebody with them that trains them our first step.
35:25 Q. But aside from someone telling them, is there
36:1 anything on this drawing that would indicate them as to
36:2 the type of weld?
36:3 A. It's like I told you earlier, it's a TIG weld.
36:4 There's no indications for any other type of weld on
36:5 this drawing.
36:6 Q. Is a fillet weld a TIG weld?
36:7 A. A fillet weld is a joint that can be welded by
36:8 any process, MIG, TIG, or anything else.

38:03 - 42:16 **Ingram, Buster 10-05-2020 (00:09:04)** IB-618.0

38:3 Q. BY MS. ZEMAN: No problem. Mr. Ingram, looking
38:4 back at the weld symbol at the sort of the top right
38:5 corner of Plaintiffs' Exhibit 666, what does the symbol
38:6 along the bottom of the line indicate?
38:7 A. That is just a fill weld.
38:8 Q. And are you referring to the symbol that are
38:9 essentially two vertical lines with a curved line
38:10 connecting them?
38:11 A. Yes.
38:12 Q. And that indicates a fill weld?
38:13 A. A fill weld.
38:14 Q. Is that different from a fillet weld?
38:15 A. Yes.
38:16 Q. How is it different?
38:17 A. It's a different joint.
38:18 Q. How so?
38:19 A. The little tube that you see protruding
38:20 through, it is just filled from the inner shell to the
38:21 nozzle on it. There's no fillet there. It's just a
38:22 fill --

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38:23 Q. Is a fillet a 90 --
38:24 MR. DUFFY: Objection. Let him just finish.
38:25 Buster, if you wanted to finish there.
39:1 THE WITNESS: Yes. It's just a seal weld, just
39:2 to fill that and seal that tube up to that inner shell.
39:3 That's all that is.
39:4 Q. BY MS. ZEMAN: Is a fillet weld used at a
39:5 90-degree angle?
39:6 A. Most of the time.
39:7 Q. So looking at this drawing just above the
39:8 indication for the weld, does the drawing show an
39:9 annular tube going through the vacuum jacket of the
39:10 tank?
39:11 A. That tube goes through the top head there, the
39:12 top ring, yes.
39:13 Q. And it extends through the vacuum space toward
39:14 the bottom of the tank; correct?
39:15 A. If you're looking at what I'm looking at,
39:16 you've got your bubble on 30 that we've been talking
39:17 about. The top of the tank is actually up 36. That's
39:18 where your tube extends through the vacuum-jacketed area
39:19 of the tank, not through the bottom.
39:20 Q. And is the bubble 26 pointing toward the
39:21 annular line?
39:22 A. Yes.
39:23 Q. And that annular line is inside of the vacuum
39:24 space of the tank; correct?
39:25 A. Correct.
40:1 Q. So it's between the inner vessel and the outer
40:2 vessel?
40:3 A. Correct.
40:4 Q. And at the bottom of the annular line is there
40:5 a fitting?
40:6 A. If you're referring to where the bubble is at
40:7 30, that's a little fitting on the end of the line.
40:8 Q. Does bubble 30 indicate a fitting that connects
40:9 the annular line to the inner vessel of the tank?
40:10 A. Yes.
40:11 Q. And is that fitting then welded to the inner
40:12 vessel?

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40:13 A. Yes.
40:14 Q. Why does the annular line attach to the inner
40:15 vessel?
40:16 A. It's a fill line. I assume that's where
40:17 they're going to fill the tank.
40:18 Q. Would you expect liquid nitrogen to be run
40:19 through that line to fill the tank?
40:20 A. Yes.
40:21 Q. And that fill line is then attached to the
40:22 inner vessel by a fitting; correct?
40:23 A. No. That's attached to the inner vessel by a
40:24 weld.
40:25 Q. By a weld on the fitting; correct?
41:1 A. The tube is welded to the fitting. Then the
41:2 fitting is welded on the inside of the inner shell.
41:3 Q. Why is it welded?
41:4 A. Well, it would leak if it wasn't.
41:5 Q. What would leak?
41:6 A. Liquid nitrogen. You wouldn't be able to fill
41:7 the tank.
41:8 Q. Would the liquid nitrogen leak into the vacuum
41:9 space?
41:10 A. Yes.
41:11 Q. Is there anything attaching that fitting to the
41:12 inner vessel other than a weld line?
41:13 A. There's nothing touching that -- attaching that
41:14 tube to the inner except that weld.
41:15 Q. Does the weld there need to be of a particular
41:16 thickness?
41:17 A. Given the thickness of the inner, which is very
41:18 thin, you're just looking to seal it. You just want
41:19 enough weld to seal that joint. It is a non-pressurized
41:20 joint.
41:21 Q. Is there any guidance provided at all by Chart
41:22 as to how thick the weld should be there?
41:23 A. Just telling you it's a typical fill weld. So
41:24 it's up to the operator to determine what seals that
41:25 joint. And given the thickness of the inner to that
42:1 tube, it don't take very much.
42:2 Q. Is it up to the individual welder to determine

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	42:3 how thick the weld will be on any given tank at that 42:4 weld location? 42:5 A. On this particular drawing it's up to the 42:6 welder. It's just telling you to fill it and seal it. 42:7 Q. For someone manufacturing it -- let me start 42:8 over. 42:9 For someone welding on a MVE 808 during the 42:10 manufacturing process, is there another drawing that 42:11 they would refer to for this specific weld? 42:12 A. Not that I'm aware of. 42:13 Q. In your opinion is this document providing 42:14 sufficient information to a welder to apply this weld on 42:15 an MVE 808? 42:16 A. Yes.	
48:25 - 55:12	**Ingram, Buster 10-05-2020 (00:13:54)** 48:25 Q. You can close that document, by the way. Mr. 49:1 Ingram, do you know what a full penetration weld is? 49:2 A. Yes. 49:3 Q. What is it? 49:4 A. Obviously just as you stated. You weld from 49:5 the top. You penetrate through the bottom of the joint. 49:6 Q. Is full penetration weld a term you're familiar 49:7 with from your welding experience? 49:8 A. Yes. 49:9 Q. Is it a term used at Chart? 49:10 A. Yes. 49:11 Q. Do you know what a partial penetration weld is? 49:12 A. Yes. 49:13 Q. What is it? 49:14 A. Well, you've got a joint where you're attaching 49:15 two pieces together, partial penetration, they'll define 49:16 how far down they want you to penetrate the particular 49:17 joint, the two pieces married together. It's usually 49:18 called out on a drawing. 49:19 Q. How would it be called out? 49:20 A. The depth of the penetration. 49:21 Q. Is there a symbol for a partial penetration 49:22 weld? 49:23 A. Yes. 49:24 Q. Is there a particular symbol for a full	IB-618.0

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49:25 penetration weld?
50:1 A. Yes.
50:2 Q. What's that symbol look like?
50:3 A. You'll have a little black dot on the bottom of
50:4 your line. That's showing you the bottom side of the
50:5 penetration. You'll either have a concave symbol on the
50:6 top with a black dot on the bottom of it.
50:7 Q. Under what circumstances is a full penetration
50:8 weld ever appropriate to join material?
50:9 A. That's determined by the engineers.
50:10 Q. So in your experience as a welder under what
50:11 circumstances do you usually see a full penetration weld
50:12 called for?
50:13 A. On pressure joints.
50:14 Q. Anything else?
50:15 A. You wouldn't need it. If it's not contained in
50:16 pressure or high pressure, there's no need in it.
50:17 Q. Have you ever applied a full penetration weld
50:18 on something other than a pressure joint?
50:19 A. No.
50:20 Q. And under what circumstances would a partial
50:21 penetration weld be appropriate to use?
50:22 A. That's to be determined by engineering.
50:23 Q. So in your experience as a welder, under what
50:24 circumstances do you usually use a partial penetration
50:25 weld?
51:1 A. To attach a handle, a lifting glove.
51:2 Q. Anything else?
51:3 A. No.
51:4 Q. What is a seal weld?
51:5 A. You just stated it. You're sealing two pieces
51:6 of steel together.
51:7 Q. Does a full penetration weld seal two pieces of
51:8 metal together?
51:9 A. It can.
51:10 Q. So how is a seal weld different from a full
51:11 penetration weld?
51:12 A. Well, full pen depends on the joint. A seal
51:13 weld depends on the joint. The particular joint you're
51:14 welding.

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51:15 Q. I'm going to ask my question again. So how is
51:16 a seal weld different from a full penetration weld?
51:17 A. Like I just stated, it depends on the joint.
51:18 Q. How so?
51:19 A. You have T joints, lap joints, butt joints,
51:20 laps and Ts. You can either have full or you can have
51:21 partial. It will be called out -- it will be called on
51:22 the drawing. Butts, it's usually on long seams or circ
51:23 seams. On pressure vessels they're all full pen.
51:24 Q. What type of weld would you typically use on a
51:25 butt joint?
52:1 A. A long seam.
52:2 Q. A long seam is a type of weld?
52:3 A. A long seam is the type of joint. You roll a
52:4 shell, you tack it together, that's your long seam.
52:5 That is a butt joint.
52:6 Q. And what weld geometry would you use on a butt
52:7 joint?
52:8 A. What weld geometry would you use on a butt
52:9 joint? That don't really make sense to me.
52:10 Q. Okay. My -- let's try to back up a little bit.
52:11 So we were talking about a full penetration weld as a --
52:12 that's a weld geometry; correct?
52:13 A. Well, it's -- yes, to a certain degree.
52:14 Q. What would you call it?
52:15 A. Depends on the joint, ma'am.
52:16 Q. I think you testified earlier that you're
52:17 familiar with the term full penetration weld; is that
52:18 correct?
52:19 A. That is correct.
52:20 Q. Do you consider a full penetration weld to be a
52:21 type of weld?
52:22 A. Yes. It is a type of weld.
52:23 Q. Okay. So a full penetration weld is a type of
52:24 weld; correct?
52:25 A. Yes.
53:1 Q. And is a partial penetration weld a type of
53:2 weld?
53:3 A. Yes.
53:4 Q. Okay. And it's a different type of weld from a

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53:5 full penetration weld; correct?
53:6 A. Yes. Beings it's partial.
53:7 Q. Okay. And is a seal weld a type of weld?
53:8 A. Yes.
53:9 Q. So those are three different types of welds;
53:10 correct?
53:11 A. Yes.
53:12 Q. And those types of welds can be used to weld
53:13 joints; correct?
53:14 A. Correct.
53:15 Q. And a butt joint is a type of joint; correct?
53:16 A. Yes.
53:17 Q. Is a long seam a type of joint?
53:18 A. The long seam is a butt joint. It depends on
53:19 the joint. Long seam, it depends on the joint, the
53:20 tank, or whatever it is you're working on.
53:21 Q. So if you wanted to weld a butt joint, you
53:22 would have to select a type of weld to use; correct?
53:23 A. Well, that -- from where I'm sitting, that
53:24 don't make sense. But yes, you're either -- you're
53:25 going to have a partial pen or a full pen or a fusion
54:1 weld on a butt joint depending on what surface the joint
54:2 is going to be holding.
54:3 Q. Is a fusion weld a type of weld?
54:4 A. Yes.
54:5 Q. How is it different from a full penetration
54:6 weld?
54:7 A. On a fusion weld you're just fusing two pieces
54:8 of metal together without filler.
54:9 Q. To weld a butt joint could you use a full
54:10 penetration weld, a partial penetration weld, or a
54:11 fusion weld?
54:12 A. Yes.
54:13 Q. Those would all be appropriate weld types for
54:14 that type of joint?
54:15 A. Depending on the application of the joint, yes.
54:16 Q. Could you use a seal weld on a butt joint?
54:17 A. The seal weld wouldn't be much different
54:18 between the fusion or the partial penetration.
54:19 Q. But it is a different type of weld from those

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54:20 two types; correct?
54:21 A. No. I mean, I know welding. You're either
54:22 going to marry two pieces together, you're going to fuse
54:23 it lightly, you're going to partially penetrate it, or
54:24 you're going to completely penetrate it. And a seal
54:25 weld would fit all three of those.
55:1 Q. What do you mean by a seal weld could fit all
55:2 three of those?
55:3 A. You are sealing a joint. That's it. You're
55:4 sealing it where you don't want anything to leak or any
55:5 access from inside or outside. You're sealing it up.
55:6 Q. Is seal weld a term that's used at Chart?
55:7 A. Yes.
55:8 Q. In what context?
55:9 A. To just marry two pieces together. To seal two
55:10 pieces of steel together.
55:11 Q. Is a full penetration weld a seal weld?
55:12 A. Absolutely.

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